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ABSTRACT

Strategies used to encourage college faculty to increase their knowledge of computers are discussed. A course offered by Indiana University-Purdue University followed the guidelines of making college teachers confident in their use of the computer. Computer jargon was not used, and terms like "computer literacy," were dispensed with. Sessions were as practical as possible, confronting real problems of the faculty. Entertaining, clearly written, and informative handouts were used, and class instructors adopted a playful light-hearted attitude toward the class. Classes were small so that individual attention and hands-on experience were possible. The class's six sessions, each lasting two hours, are briefly described. (CB)

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TURNING COMPUTERPHOBES INTO COMPUTERPHILES

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The course followed these guidelines: The objective was to make college teachers confident in their use of the computer. We dispensed with computer jargon; gave the course dignity by not using terms like "computer literacy;" solved actual problems of using the computer in the college classroom, office, and laboratory; used handouts; had small classes; and individualized our approach.

We had six, two-hour sessions: introduction to the computer, word-processing, on-line data bases, data management, graphics, and shell programming.

When the word was passed that faculty were to be encouraged to become computer literate, there was dismay among faculty members, especially among those expected to pass this miracle among their colleagues. They felt like the man who was expected to swallow an elephant. They finally found it possible to attack the task the same way he did---he cut it in very small pieces---bite-sized chunks---no pun intended.

College professors are not different from other adult computer novices. They are afraid of looking foolish. Starting as a beginner is especially hard for people who are used to being good at what they do. Many of them suspect computers are just a fad anyway---and not related to their needs.

Here are some strategies we used to counter this dysfunctional thinking in our student professors.

1. We decided on one simple objective. We wanted every class member to feel confident in using the computer to support his/her college teaching.

2. We dispensed with computer jargon and talked English. If a computer reference had a common name, we used it. We stopped talking about documenation and said "manual". We were folksy instead of technical.

3. We quit using put-down references like "entry-level" and "literacy"---which implied that the faculty member who does not know how to use the computer illiterate---not a very pleasant thought. Instead, the beginner's class had a dignified title, "Integrating the Computer into the College Classroom, Laboratory, and Faculty Office." And we defined "computer literacy," as knowing whatever one needed to know to use the computer as much as one desired, in the classroom, in the office, at home, in pursuit of avocations.

4. We made our sessions as practical as possible, confronting real problems of the college teacher.

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5. We used entertaining, clearly-written, and informative handouts, so that no one needed to take notes. When step-by-step instructions were needed, we provided them. Many college teachers are convergent thinkers in their learning style. They believe that following recipes is the most economical way to learn. Our solid conviction is that the greatest progress in learning to use a computer comes to the one who has an experimental, playful attitude toward learning, but we were there to meet their expectations, not ours.

6. We designed small classes, where individual attention to everyone's needs and hands-on experiences were possible. No one was allowed to feel frustrated. Since our department is a teacher education unit, we assigned students in our graduate classes in instructional computing to assist as part of their practicum experience.

7. We adopted a playful and light-hearted attitude toward the class. We put computer cartoon-jokes from the New Yorker in the handouts. Near the end, we had a spouse-and-children session and let everyone use home and children's software.

8. We used special come-ons. At the end of each class, for instance, we posed a problem and promised we would solve it by computer during the next class period.

9. We gave special help for those who had never learned to type. At least one-third were one-and-two-finger typists. They had to learn simple things like keeping their hands over the keyboard while they waited for the disk drive to stop whirring.

10. We kept in touch with absentees, sending them handouts and offering makeup tutoring sessions. A special room was equipped with computers, where faculty could go to practice. Faculty were encouraged to borrow a computer to take home.

11. We applied the best methods of teaching computer use that we could find. For instance, in teaching the lesson in word processing, students should be encouraged to type 10-15 lines without pausing to correct errors. The resulting text provides enough errors to supply material for editing. The repetitive nature of the errors teaches editing commands.

The curriculum was contained in six two-hour sessions. In the first, we introduced participants to the computer. We took the top off and looked inside at the chips, slots, and power supply. We checked the speed on the disk drives. We located all the different places switches can be placed. We used a tutorial and a system master. We initialized a disk and copied a program. We talked about buying a personal computer, distributed summaries of income tax provisions, and gave handouts on computer care. We talked about the ethics of using copy-righted software. We used a 2' X 6' hardboard-mounted picture to show how the computer keyboard differs from its typewriter cousin.

Our second lesson was on word-processing. We showed its use in preparation and revison of lecture notes, handouts, syllabi, vitas, and bibliographies. We showed how to print with large type, to increase visibility of notes on a lectern. We mentioned keeping notes on disks, available to absent students. We talked about the values of independence from secretarial help. We demonstrated

use of the large Sony projector as a supplement to the overhead projector teachers want to project their writing on the computer as they lecture. We showed them how to cut and paste on the computer to create their articles and books without using scissors and tape. We showed various windowing routines, where a split screen enables the writer to transfer unsequenced material to an outline. We practiced various methods of computerizing footnotes. We demonstrated the expanding of ideas that emerges from being able to look at trial printouts.

The third lesson was a demonstration of on-line data bases available in the university library. We used a modem to show what could be used in a variety of subject areas. This information had been distributed by the library previously, but, until they actually saw the items on the screen, faculty had not thought of using them. We showed how quickly articles with promising titles may have their final usefulness judged without having to read them or wait for printed annotations.

Our fourth lesson was on creating one's own data bases, filing them in a form of one's own design, and retrieving information in various sequences from a filing program. We used PFSFILE with its Graphing and Report capabilities. We discussed problems of collecting, ordering, reviewing, combining, and recombining large amounts of collected data into various sequences until inferences and hypotheses begin to emerge and the comparative simplicity of this task when collected materials are onscreen rather than in piles on tables. We practiced using the spreadsheet for speedy "what if" calculations to uncover hidden possibilities and support decision-making.

The fifth lesson was on use of picture-making possibilities on the computer. We did not use the word "graphics," which conjures up visions of plotting on coordinates and doing other antics dear to computer users but poison to the non-math minded. We used commercial programs to show how models for clear, eye-catching transparencies could be made, incorporating stylish and varied printing of text and pictures with professional-looking borders and designs. We used the Gibson Lite Pen and various drawing pads that made artists out of everyone. We introduced faculty to LOGO. We demonstrated the Digital Paintbrush, which allows the user to share and change drawings while working on the modem with users far away. We also explored several sound programs which provided music and voice---Echo II, Mockingboard, and Cricket---and discussed their relationship to the eventual development of artificial intelligence and the use of natural language by computers.

The sixth lesson provided shell programs which could be used to create drill and practice programs, tests, or classroom records. We practiced with a class record that could be updated and reprinted for each class meeting. We talked about whether we wanted to become programmers and showed some listings of programs we had been using to illustrate the work necessary to making good programs. We illustrated the improvement in programs that is occurring and discussed the importance of sending in warranties so that we can be sure to know when updates of commercial programs are available. We talked about how the computer's capabilities even in simple drill and practice programs, have one important quality the classroom lecture and the worksheet cannot give---the powerful motivation of interaction and immediate feedback. We showed how students can use a group of computers to supplement what a teacher is saying as a teacher-lecture proceeds.

What were results? One-half the faculty participated. Most stayed to finish the class. We have been asked by departments who have new faculty coming on board if we will be offering a class next year. And we made lots of new friends on the faculty. And class members made new friends with faculty from disciplines other their own, as they worked together, becoming---perish the expression---computer literate